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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,289	12/07/2004	Axel Doering	GK-ZEI-3255 / 500343.2027	4475

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REED SMITH, LLP
ATTN: PATENT RECORDS DEPARTMENT
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EXAMINER
DWIVEDI, MAHESH H

ART UNIT	PAPER NUMBER
2168	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	10/517,289	DOERING, AXEL
Office Action Summary	Examiner	Art Unit	
	Mahesh H. Dwivedi	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 October 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>7-13</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>7-13</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>07 December 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☒ Some *   c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/4/2006</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Information Disclosure Statement

2.   The information disclosure statement filed 08/04/2006 fails to comply with 37

CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document;

each non-patent literature publication or that portion which caused it to be listed; and all

other information or that portion which caused it to be listed. It has been placed in the

application file, but the information referred to therein has not been considered.

Response to Amendment

3.   Receipt of Applicant's Amendment, filed on 10/26/2006, is acknowledged. The

amendment includes amending the specification and the amending of claims 7, and 11-

12.

Specification

4.   The objections raised in the office action mailed on 07/26/2006 have been

overcome by the applicant's amendments received on 10/26/2006.

Drawings

5.   The objections raised in the office action mailed on 07/26/2006 have been

overcome by the applicant's amendments received on 10/26/2006.

Claim Objections

6.   The objections raised in the office action mailed on 07/26/2006 have been

overcome by the applicant's amendments received on 10/26/2006.

7.   Claim 12 is objected to because of the following informalities: The examiner

suggests that applicant change "further comprising" to "further comprising:".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
>
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
>
> the prior art are such that the subject matter as a whole would have been obvious at the time the
>
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
>
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Golden et al. (U.S. Patent 6,766,041) and in view of **Marshall et al.** (U.S. Patent

6,453,057).

10.   Regarding claim 7, **Golden** teaches a method comprising:

A) carrying out a similarity analysis by a stored comparison image, and/or by a

standard image created by evaluating a plurality of comparison images (Abstract); and

B) creating new images that are stored for purposes of comparison at a later time

(Abstract, Column 5, lines 50-67-Column 6, lines 1-6).

The examiner notes that **Golden** teaches **"carrying out a similarity analysis by a stored comparison image, and/or by a standard image created by evaluating a plurality of comparison images"** as "The image and data gathered therefrom may be stored in a database for later retrieval and comparison against other images. The data gathered from the image may be compared against other stored data in the database to determine the identity of the animal" (Abstract). The examiner further notes that **Golden** teaches **"creating new images that are stored for purposes of comparison at a later time"** as "The present invention creates a permanent record of an animal...The image and data gathered therefrom may be stored in a database for later retrieval and comparison against other images" (Abstract), "By including a GPS stamp with each identification record created, each previous location where an identification record was created on the animal would be identified in a manner that is virtually incontrovertible" (Column 5, lines 60-64), and "the records could be compared to determine the exact time and location of the last record taken on that individual...creates the equivalent of a social security identification system for animals" (Column 5, line 67-Column 6, lines 1-6).

Golden does not explicitly teach:

C) determining deviations from a stored comparison image; and/or from a standard image created by evaluating a plurality of comparison images.

Marshall, however, teaches **"determining deviations from a stored comparison image; and/or from a standard image created by evaluating a plurality of comparison images"** as "Fig. 10 illustrates the signal patterns 94 and 96

generated form two different images of the same individual's retina where the images were taken several months apart...Thus, the method of the present invention provides a unique signal pattern for an individual from pixel intensity data representing an image of a portion of the optic disk where a matching or consistent signal pattern is generated from different images of the same individual's retina" (Column 7, lines 37-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Marshall's** would have allowed **Golden's** to provide a method to search for varied vascular structures and images, as noted by **Marshall** (Column 1, lines 45-53).

Regarding claim 8, **Golden** further teaches a method comprising:

A) wherein the evaluation is carried out by averaging extracted features (Column 7, lines 19-38).

The examiner notes that **Golden** teaches **"wherein the evaluation is carried out by averaging extracted features"** as "If sufficient variation exists, then the major transitions in the slice of light-dark-light pixels would then be detected using a moving average analysis" (Column 7, lines 30-32).

Regarding claim 9, **Golden** further teaches a method comprising:

A) wherein deviations are determined and/or the similarity analysis is carried out on the basis of a gray-value analysis (Column 7, lines 19-38); and/or

B) a structure analysis (Column 3, lines 61-67,Column 5, lines 27-49).

The examiner notes that **Golden** teaches **"wherein deviations are determined and/or the similarity analysis is carried out on the basis of a gray-value analysis"** as "The data in these slices would then be converted to a high contrast gray representation of the slice by averaging the red, green, and blue octets of each pixel" (Column 7, lines 25-28). The examiner further notes that **Golden** teaches **"a structure analysis"** as "By targeting common structures such as the optic disk and dorsal retinal vascular branches, a consistent source of readily identifiable, yet contrasting structures are available for digital imaging and processing" (Column 3, lines 61-64).

Golden does not explicitly teach:

C) an analysis of color histograms.

Marshall, however, teaches **"an analysis of color histograms"** as "More importantly, as shown at block 20, a histogram of the pixel intensities is first calculated by the processor for a received retinal image" (Column 4, lines 7-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Marshall's** would have allowed **Golden's** to provide a method for the analysis of bit mapped image data representing the intensity of pixels forming an image of an area of an individual's retina , as noted by **Marshall** (Column 1, lines 58-61).

Regarding claim 10, **Golden** further teaches a method comprising:

A) wherein an extraction of vascular tree parameters is carried out (Column 2, lines 36-47, Column 6, lines 48-67, Figures 2-7).

The examiner notes that **Golden** teaches **"wherein an extraction of vascular tree parameters is carried out"** as "The method of the present invention includes the step of preliminarily acquiring an image of the retinal vasculature of the subject animal" (Column 6, lines 48-51).

Regarding claim 11, **Golden** teaches an arrangement comprising:

A) a fundus camera for recording the ocular fundus (Column 4, lines 58-67-Column 5, lines 1-7);

B) an image storage for storing recorded fundus images (Abstract, Column 3, lines 46-50, Column 5, lines 8-26); and

C) means for evaluating the recorded fundus images further comprising: means for gray-value analysis (Column 7, lines 19-38); and/or

D) means for structure analysis (Column 5, lines 27-49);

E) a comparison unit connected to the image store (Abstract, Column 5, lines 50-67-Column 6, lines 1-6); and

F) wherein the comparison unit compares images recording in the image store and creates new images (Abstract, Column 5, lines 50-67-Column 6, lines 1-6).

The examiner notes that **Golden** teaches **"a fundus camera for recording the ocular fundus"** as "The type of lens system would be similar to a lens such as that used on a conventional ocular fundus camera" (Column 5, lines 1-2). The examiner further notes that **Golden** teaches **"an image storage for storing recorded fundus images"** as "The image and data gathered therefrom may be stored in a database for

later retrieval and comparison against other images. The data gathered from the image

may be compared against other stored data in the database to determine the identity of

the animal" (Abstract). The examiner further notes that **Golden** teaches **"means for**

evaluating the recorded fundus images further comprising: means for gray-value

analysis" as "The data in these slices would then be converted to a high contrast gray

representation of the slice by averaging the red, green, and blue octets of each pixel"

(Column 7, lines 25-28). The examiner further notes that **Golden** teaches **"means for**

structure analysis" as "By targeting common structures such as the optic disk and

dorsal retinal vascular branches, a consistent source of readily identifiable, yet

contrasting structures are available for digital imaging and processing" (Column 3, lines

61-64). The examiner further notes that **Golden** teaches **"a comparison unit**

connected to the image store" as "The present invention creates a permanent record

of an animal...The image and data gathered therefrom may be stored in a database for

later retrieval and comparison against other images" (Abstract), "By including a GPS

stamp with each identification record created, each previous location where an

identification record was created on the animal would be identified in a manner that is

virtually incontrovertible" (Column 5, lines 60-64), and "the records could be compared

to determine the exact time and location of the last record taken on that

individual...creates the equivalent of a social security identification system for animals"

(Column 5, line 67-Column 6, lines 1-6). The examiner further notes that **Golden**

teaches **"wherein the comparison unit compares images recording in the image**

store and creates new images" as "The present invention creates a permanent record

of an animal...The image and data gathered therefrom may be stored in a database for later retrieval and comparison against other images" (Abstract), "By including a GPS stamp with each identification record created, each previous location where an identification record was created on the animal would be identified in a manner that is virtually incontrovertible" (Column 5, lines 60-64), and "the records could be compared to determine the exact time and location of the last record taken on that individual...creates the equivalent of a social security identification system for animals" (Column 5, line 67-Column 6, lines 1-6).

Golden does not explicitly teach:

G) means for preparing color histograms.

Marshall, however, teaches **"means for preparing color histograms"** as "More importantly, as shown at block 20, a histogram of the pixel intensities is first calculated by the processor for a received retinal image" (Column 4, lines 7-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Marshall's** would have allowed **Golden's** to provide a method for the analysis of bit mapped image data representing the intensity of pixels forming an image of an area of an individual's retina , as noted by **Marshall** (Column 1, lines 58-61).

Regarding claim 12, **Golden** further teaches an arrangement comprising:

A) <u>a means for carrying out a similarity analysis by a stored comparison image and/or</u>

<u>by a standard image created by evaluating a plurality of comparison images</u> (Abstract);

and/or

B) a structure analysis (Column 3, lines 61-67,Column 5, lines 27-49).

The examiner notes that **Golden** teaches "**a means for carrying out a**

similarity analysis by a stored comparison image and/or by a standard image

created by evaluating a plurality of comparison images" as "The image and data

gathered therefrom may be stored in a database for later retrieval and comparison

against other images. The data gathered from the image may be compared against

other stored data in the database to determine the identity of the animal" (Abstract).

Golden does not explicitly teach:

B) <u>a means for determining deviations from a stored comparison image and/or from a</u>

<u>standard image created by evaluating a plurality of comparison images</u>.

Marshall, however, teaches "**a means for determining deviations from a**

stored comparison image and/or from a standard image created by evaluating a

plurality of comparison images" as "Fig. 10 illustrates the signal patterns 94 and 96

generated form two different images of the same individual's retina where the images

were taken several months apart…Thus, the method of the present invention provides a

unique signal pattern for an individual from pixel intensity data representing an image of

a portion of the optic disk where a matching or consistent signal pattern is generated

from different images of the same individual's retina" (Column 7, lines 37-51).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of the cited references because teaching

Marshall's would have allowed **Golden's** to provide a method for the analysis of bit

mapped image data representing the intensity of pixels forming an image of an area of

an individual's retina , as noted by **Marshall** (Column 1, lines 58-61).

Regarding claim 13, **Golden** further teaches an arrangement comprising:

A) means are provided for similarity analysis by a stored comparison image, and/or a

standard image created by evaluating a plurality of comparison images (Abstract).

The examiner notes that **Golden** teaches **"means are provided for similarity**

analysis by a stored comparison image, and/or a standard image created by

evaluating a plurality of comparison images" as "The image and data gathered

therefrom may be stored in a database for later retrieval and comparison against other

images. The data gathered from the image may be compared against other stored data

in the database to determine the identity of the animal" (Abstract).

Golden does not explicitly teach:

B) wherein means are provided for determining deviations from a stored comparison

image; and/or from a standard image created by evaluating a plurality of comparison

images.

Marshall, however, teaches **"wherein means are provided for determining**

deviations from a stored comparison image; and/or from a standard image

created by evaluating a plurality of comparison images" as "Fig. 10 illustrates the

signal patterns 94 and 96 generated form two different images of the same individual's

retina where the images were taken several months apart…Thus, the method of the

present invention provides a unique signal pattern for an individual from pixel intensity

data representing an image of a portion of the optic disk where a matching or consistent

signal pattern is generated from different images of the same individual's retina"

(Column 7, lines 37-51).

. It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of the cited references because teaching

Marshall's would have allowed **Golden's** to provide a method to search for varied

vascular structures and images, as noted by **Marshall** (Column 1, lines 45-53).

Response to Arguments

11.   Applicant's arguments filed on 10/26/2006 have been fully considered but they

are not persuasive.

Applicant goes on to argue on page 6, that **"Specifically, the cited references**

fail to teach or suggest <u>creating new images that are stored for purposes of</u>

<u>comparison at a later time</u>". However, the examiner wishes to point to Column 5 of

Golden and refer to the fourth paragraph which states "By including a GPS stamp with

each identification record created, each previous location where an identification record

was created on the animal would be identified in a manner that is virtually

incontrovertible" (Column 5, lines 60-64). The examiner further wishes to point to

Column 6 of **Golden** and refer to the first paragraph which states "the records could be

compared to determine the exact time and location of the last record taken on that

individual...creates the equivalent of a social security identification system for animals"
(Column 5, line 67-Column 6, lines 1-6). The examiner wishes to state that **Golden's**
method clearly has a unique identification system which tracks and allows for future
comparison against stored images of the same animal (see "the records could be
compared to determine the exact time and location of the last record taken on that
individual" (Column 5, line 66-Column 6, lines 1-2).

Applicant goes on to argue on page 6, that **"In contrast to the teachings of the
cited references, the claimed invention provides a method to find images that
constitute the same or a similar pathology but taken from pre-stored archives or
images of one and the same patient that was recorded earlier. The claimed
invention can also generate new images which are then stored for later
comparison"**. However, the examiner wishes to point to Column 5 of **Golden** and refer
to the fourth paragraph which states "By including a GPS stamp with each identification
record created, each previous location where an identification record was created on
the animal would be identified in a manner that is virtually incontrovertible" (Column 5,
lines 60-64). The examiner further wishes to point to Column 6 of **Golden** and refer to
the first paragraph which states "the records could be compared to determine the exact
time and location of the last record taken on that individual...creates the equivalent of a
social security identification system for animals" (Column 5, line 67-Column 6, lines 1-
6). The examiner wishes to state that **Golden's** method clearly has a unique
identification system which tracks and allows for future comparison against stored
images of the same animal (see "the records could be compared to determine the exact

time and location of the last record taken on that individual" (Column 5, line 66-Column

6, lines 1-2).

Applicant goes on to argue on page 6, that **"Thus, it is submitted that neither**

Golden nor Marshall teach or suggest <u>creating new images that are stored for</u>

<u>purposes of comparison at a later time</u>". However, the examiner wishes to point to

Column 5 of **Golden** and refer to the fourth paragraph which states "By including a GPS

stamp with each identification record created, each previous location where an

identification record was created on the animal would be identified in a manner that is

virtually incontrovertible" (Column 5, lines 60-64). The examiner further wishes to point

to Column 6 of **Golden** and refer to the first paragraph which states "the records could

be compared to determine the exact time and location of the last record taken on that

individual... creates the equivalent of a social security identification system for animals"

(Column 5, line 67-Column 6, lines 1-6). The examiner wishes to state that **Golden's**

method clearly has a unique identification system which tracks and allows for future

comparison against stored images of the same animal (see "the records could be

compared to determine the exact time and location of the last record taken on that

individual" (Column 5, line 66-Column 6, lines 1-2).

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

U.S. Patent 6,757,409 issued to **Marshall et al.** on 29 June 2004. The subject

matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture,

store, analyze, compare, and retrieve fundus images).

U.S. PGPUB 2004/0156016 issued to **Kerr et al.** on 12 August 2004. The

subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to

capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 7,055,955 issued to **Kishida et al.** on 06 June 2006. The subject

matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture,

store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,755,526 issued to **Shibata** on 29 June 2004. The subject matter

disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store,

analyze, compare, and retrieve fundus images).

U.S. Patent 6,112,114 issued to **Dreher** on 29 August 2000. The subject matter

disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store,

analyze, compare, and retrieve fundus images).

U.S. Patent 6,409,342 issued to **Ohnyuma et al.** on 25 June 2002. The subject

matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture,

store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,928,193 issued to **Gersten** on 09 August 2005. The subject matter

disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store,

analyze, compare, and retrieve fundus images).

U.S. Patent 5,287,129 issued to **Sano et al.** on 15 February 1994. The subject

matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture,

store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,053,865 issued to **Sugiyama et al.** on 25 April 2000. The subject

matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture,

store, analyze, compare, and retrieve fundus images).

U.S. Patent 5,993,001 issued to **Bursell et al.** on 13 November 19999. The

subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to

capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 5,557,9471 issued to **Barber et al.** on 26 November 1996. The

subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to

capture, store, analyze, compare, and retrieve fundus images).

13.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Contact Information

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mahesh Dwivedi whose telephone number is (571) 272-

2731. The examiner can normally be reached on Monday to Friday 8:20 am – 4:40 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tim Vo can be reached (571) 272-3642. The fax number for the

organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Mahesh Dwivedi

Patent Examiner

Art Unit 2168

November 02, 2006

Leslie Wong

TIM VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Primary Examiner